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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/557,607

11/22/2005

Fumio Hashimoto

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EXAMINER

ROBINSON, KEITH O NEAL

ART UNIT

PAPER NUMBER

1638

MAIL DATE

DELIVERY MODE

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/557,607	Applicant(s) HASHIMOTO ET AL.	
	Examiner KEITH O. ROBINSON	Art Unit 1638	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 March 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) 8-11 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>11/22/05; 3/10/06; 11/30/07</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

Applicant's election without traverse of Group I (claims 1, 3, 4, 6 and 7) in the reply filed on March 21, 2008 is acknowledged. Upon further review, the Examiner has decided Group II (claims 2, 5 and 7) should not have been separated from Group I; therefore, Group I and Group II will be combined.

Claims 8-11 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected group, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on March 21, 2008.

Claims 1-7 are under examination.

Priority

Receipt is acknowledged of 'Certified copy of foreign priority application' 2003-144406, filed in JAPAN on May 22, 2003 submitted under 35 U.S.C. 119(a)-(d) and filed November 22, 2005, which papers have been placed of record in the file. Should applicant desire to obtain the benefit of foreign priority under 35 U.S.C. 119(a)-(d) prior to declaration of an interference, a certified English translation of the foreign application must be submitted in reply to this action. 37 CFR 41.154(b) and 41.202(e).

Failure to provide a certified translation may result in no benefit being accorded for the non-English application.

Information Disclosure Statement

References AF, AG, AH, AI, AJ, AK, AM, AN and AW of the information disclosure statement filed November 22, 2005 are not considered for the following reasons: (1) References AF, AG, AH, AI, AJ, AK, AM and AN are not in English. See MPEP § 609.01(B)(3)(b).

(2) Reference AW is missing page 476.

Applicant is advised that the date of any re-submission of any item of information contained in this information disclosure statement or the submission of any missing element(s) will be the date of submission for purposes of determining compliance with the requirements based on the time of filing the statement, including all certification requirements for statements under 37 CFR 1.97(e). See MPEP § 609.05(a).

Claim Rejections - 35 USC § 112, second paragraph

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-7 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The claims recite a method of crossing flowering plants based on their pigment genotypes but fail to provide any method steps for the claimed method.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

Claims 1, 3, 4, 6 and 7 are rejected under 35 U.S.C. 102(a) as being anticipated by Uddin et al (Acta Horticulturae. 2003. A Proceeding of the XXVI International Horticultural Congress, Elegant Science in Floriculture, pp.51-59, convention held 11-17 August 2002).

The claims read on a method for crossing flowering plants based on their pigment genotypes comprising creating new flower color utilizing new genotype $H^xH^x \cdot Pg/pg \cdot Cy/cy \cdot Dp/dp$, which is heredity of pelargonidin, cyanidin and delphinidin which are main flower pigments concerning the flower color expression.

Uddin et al disclose a method for crossing flowering plants based on their pigment genotypes comprising creating new flower color utilizing new genotype $H^xH^x \cdot Pg/pg \cdot Cy/cy \cdot Dp/dp$ (see, for example, page 51, last paragraph where it discloses “[r]eciprocal cross-pollination among the three major anthocyanidin predominant F1 cultivars were done and the F1 progenies were further self- and cross-pollinated to determine the segregation of anthocyanidin phenotypes; see, for example, page 53, 1st – 8th paragraph where it discloses genotypes H^xH^x , Pg/pg , Cy/cy , and Dp/dp produced from crossing flowering plants based on pigment genotypes and the segregation of genes to produce new genotypes).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Oud et al (Euphytica 84: 175-181, 1995), in view of van Raamsdonk (Genetic Resources and Crop Evolution 40: 49-54, 1993), taken with the evidence of Griesbach (J. Heredity 87(3): 241-245, 1996).

The claims read on a method for crossing flowering plants based on their pigment genotypes comprising creating new flower color utilizing new genotype $H^xH^x \cdot Pg/pg \cdot Cy/cy \cdot Dp/dp$, which is heredity of pelargonidin, cyanidin and delphinidin which are main flower pigments concerning the flower color expression.

Regarding claims 1 and 2, Oud et al teach a method for crossing flowering plants based on their pigment genotypes (see, for example, page 176, 2nd column, 'Materials and methods' where it teaches that breeding material that served as acceptors differed considerably in genetic backgrounds and flower color and recombinations using transgenic lines as male as well as female were made with the four selected elite lines); Oud et al also teach utilizing genotype $H^xH^x \cdot Pg/pg \cdot Cy/cy \cdot Dp/dp$, which is heredity of pelargonidin, cyanidin and delphinidin (see, for example, page 176, Figure 1 where it depicts the biosynthetic pathway of anthocyanins in *Petunia hybrida* and teaches pelargonidin, cyanidin and delphinidin as well as genes *Hf* and *Ht*, which Griesbach teaches are genes associated with hydroxylation. See page 243, 1st column, 'Results'.)

The specification teaches that genotypes D/d and E/e are associated with corolla characters of double flower type and marginal variegation, respectively (see, for example, page 3 of 'Claims' filed November 22, 2005).

Oud et al teach that in *Petunia hybrida* different flower types can be distinguished based on the gene *Un* which determines the 'undulata' shape of the corolla (see page 175, 1st column, 'Introduction'). Though Oud et al do not teach genotypes D/d and E/e associated with corolla, they do teach the gene *Un* associated with corolla and one of ordinary skill in the art would appreciate that other genes are associated with corolla.

Regarding claims 4-6, Oud et al teach flower color of flowering plants inherited in the course of flavonoid biosynthesis (see, for example, page 178, Table 3 where it teaches color description and pigment analysis of F3 breeding lines and their

corresponding F4 offspring as well as their relative anthocyanidin content and Figure 1 teaches flavonoid biosynthesis).

Regarding claim 7, Oud et al teach flower color is maternally inherited (see, for example, page 176, 2nd column, 'Materials and methods' where it teaches recombinations using transgenic lines as male as well as female were made with the four selected elite lines).

Oud et al do not teach the flavonoid biosynthesis route formula of claim 3.

van Raamsdonk teaches the flavonoid biosynthesis route formula of claim 3 (see, for example, page 50, Figure 1 where it depicts the biosynthetic pathway of anthocyanidins).

It would have been *prima facie* obvious to one of ordinary skill in the art at the time of Applicant's invention to combine the above teachings to produce the claimed invention.

One of ordinary skill in the art would have been motivated to combine these teachings because van Raamsdonk teaches that the anthocyanidin pigments pelargonidin, cyanidin and delphinidin play a major role in flower coloration (see page 49, 'Introduction') and Oud et al teach that the use of different genetic backgrounds can produce new combinations of anthocyanidins yielding different color shades (see page 178, 1st column, lines 1-3).

In addition, one of ordinary skill in the art would have reasonable expectation of success based on the success of Oud et al in crossing flowering plants based on their pigment genotypes, as discussed above.

Conclusion

No claims are allowed.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to KEITH O. ROBINSON whose telephone number is (571)272-2918. The examiner can normally be reached Monday – Friday, 7:30 a.m. - 4:30 p.m. EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Anne Marie Grunberg can be reached at (571) 272-0975. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Keith O. Robinson, Ph.D.
Examiner
Art Unit 1638
July 15, 2008

/Medina A Ibrahim/
Primary Examiner, Art Unit 1638